Device for measuring moisture content for grain crops M150G (M150GL)

User's manual

Made in Ukraine

Content

Purpose and application

It is designed for quick and accurate measurement of moisture content and temperature of grain crops: sunflower, wheat, barley, corn, rapeseed, oats, soybeans, buckwheat and peas. The moisture meter is based on the dielcometric measurement method, which ensures high sensitivity and accuracy of the device, and the long probe enables measurements at different material depths.

Technical characteristics

- Measurement method: dielcometric, non-destructive.
- Moisture measuring range: 0-80 % (depending on the type of raw material).
- Number of grain crops: 10 (sunflower, wheat, barley, corn, corn 2, rapeseed, oats, soybeans, buckwheat and peas).
- Temperature measuring range: 0-99 °C.
- Accuracy: ±0,5 %.
- Resolution: 0,1 %.
- Length of the measuring part of the probe: 35 cm (M150G model) / 58 cm (M150GL model).
- Penetration of the high-frequency radiation field: 50 mm from the sensor.
- Operation conditions: 0~60 °C, 0-90 % relative humidity.
- Power supply: 3 1.5 V AAA batteries.
- Dimensions: 115x68x25 mm.
- Weight: 140 g with batteries.

Device description

The appearance of the device is shown in Fig. 1.

Figure 1 — Device appearance

1. Probe.
2. Sensor.
3. Connecting cable.
4. Pickup for connecting the probe.
5. Display.
6. POWER button.
7. SET button.
8. ▲ / HOLD button.
9. ▼ / LIGHT button.

The device includes a measuring probe with a sensor at the end, a connection cable and the device itself. The measuring probe is connected to the device by the connection cable through the pickup located on the top of the device. The device has four buttons and a graphic screen for displaying information.

Buttons functions:

Switch on/off (POWER) — switch on or off by holding down the button.

Set (SET) — entering the grain crop selection mode and confirms the selection.

Button ▲ — moves upwards in the grain crop selection mode or the HOLD function in the measurement mode.

Button ▼ — move down in the material group selection mode, switch on/off the LIGHT backlight in the measurement mode.

Operating modes of the device

The device operates in the following modes:

Measurement mode (SCAN) — the main mode of device operation, which provides display of temperature and moisture measurement results, selected grain crop, battery charge indicator, as shown in Fig. 2.
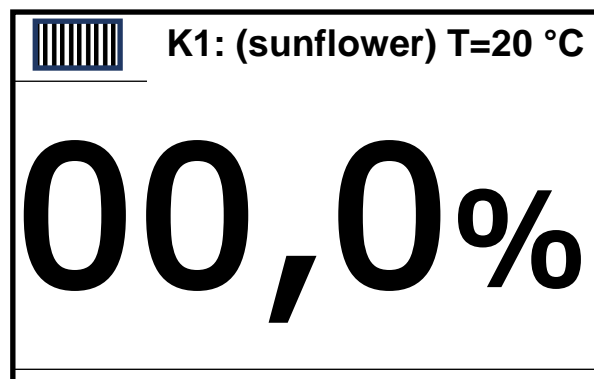

Figure 2 — Device screen in measurement mode

Group selection mode (SET) — allows to select the crop whose grain moisture is being measured.
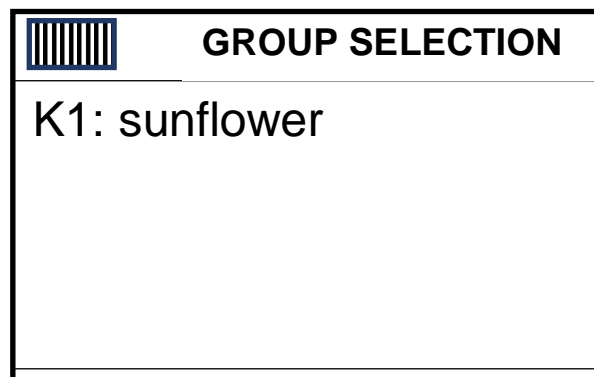

Figure 3 — Device screen in crop selection mode

Calibration mode (CAL) — is intended for calibration of the device at the zero point of the measuring range (Fig. 4). It is used when in the measurement mode the measurement result does not take a zero value in the absence of a test sample.
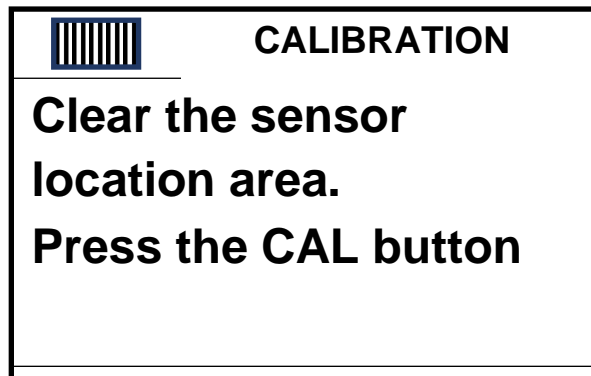

Figure 4 — Calibration mode screen

Built-in functions

The function of holding the measurement result on the screen is activated and deactivated by pressing the button (▲/HOLD) and in the measurement mode ensures fixing the measurement result on the device screen until the button is pressed again.

Battery charge control function. The device signals about the battery discharge with the corresponding image on the display. When the battery level falls below a certain threshold, the device does not switch on, but signals the low battery by flashing the screen backlight.

The screen backlight function is switched on/off by pressing the button (▲/ LIGHT) in the measurement mode.

Auto-off function. If the device is inactive (no buttons were pressed or the measurement result was changed) for 5 minutes, it automatically switches off.

Probe control function. If the probe is not connected or if it is damaged or the cable is damaged, it displays a message on the screen.
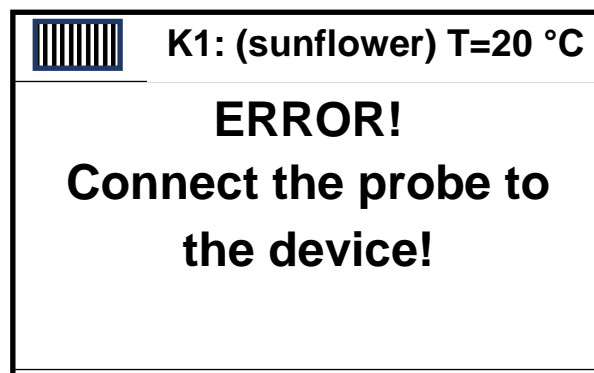

Figure 5 — Probe control function message

Operation of the device

To measure, switch on the device and, if necessary, select the desired crop. Switch on the device by pressing the POWER button. To do this, hold it down for about 1 second. After switching on, the device will immediately enter the measurement mode (with the last settings saved). The group number and selected grain corp type is displayed at the top of the screen.

To carry out the measurement, immerse the sensor, which is located at the end of the measuring part of the probe, into the grain mass to the depth at which you want to measure, and read the moisture and temperature values from the device screen. **When measuring grain moisture content in large containers (trucks, storage facilities, embankments, etc.), the sensor plate should be completely immersed in the grain at a distance of at least 20 cm from the nearest metal object.** If the volume of the measurement sample is small, it is advisable to measure in a special plastic container.

For a correct temperature measurement, wait until the result on the device screen stabilises.

If you need to fix the measured value on the screen, press the button (▲/HOLD), pressing it again will switch the device back to the measurement mode.

To switch off the device, hold down the Power/Mode button for about 2 seconds.

Attention! Make sure that there are no metal objects in the area of the device sensor, which can lead to distortion of the measurement result.

The screen displays the mode selection window, in which the ▲, ▼ buttons should be used to select the desired crop by name. Pressing the SET button again fixes the selected crop and switches the device to the measurement mode. The description of the crop groups is given in the table.

Table of material groups of the METRINCO M150G moisture meter

Group	Grain crop
K1	sunflower
K2	wheat
K3	barley
K4	corn
K5	corn 2
K6	rapeseed
K7	oats
K8	soybeans
K9	buckwheat
K10	peas

Calibration of the device should be carried out if the measurement result in the measurement mode does not take a zero value in the absence of a test sample. To do this, when the instrument is switched off, press the SET button and switch on the instrument while holding it down. After that, release the buttons and press the SET button again to release the sensor sensitivity zone. During calibration, do not place your hands or any objects in the sensor sensing area. This may result in incorrect calibration of the device. Switch off the device when calibration is complete.

The warranty for the device is 24 months from the date of sale.

The warranty for the probe is 12 months from the date of sale.

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Serial production of moisture meters complies with the basic requirements of the Electromagnetic Compatibility Directive 2014/30/EU. The full text of the declaration of conformity can be found on our website at metrinco.com or sent to you upon request to our email address.

Serial number: _____

Sale date: _____

Seller signature and stamp: _____